

**COMMENT FORM**

**Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards**

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

- DO:       **Do** enter text only, with no formatting or styles added.  
           **Do** use punctuation and capitalization as needed (except quotations).  
           **Do** use more than one form if responses do not fit in the spaces provided.  
           **Do** submit any formatted text or markups in a separate WORD file.

- DO NOT: **Do not** insert tabs or paragraph returns in any data field.  
           **Do not** use numbering or bullets in any data field.  
           **Do not** use quotation marks in any data field.  
           **Do not** submit a response in an unprotected copy of this form.

| <b>Individual Commenter Information</b>                                |                                     |  |
|--|-------------------------------------|--|
| (Complete this page for comments from one organization or individual.) |                                     |  |
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| NERC Region  | Registered Ballot Body Segment      |  |
| <input type="checkbox"/> ERCOT   | <input type="checkbox"/>            | 1 - Transmission Owners  |
| <input type="checkbox"/> ECAR  | <input checked="" type="checkbox"/> | 2 - RTOs, ISOs, Regional Reliability Councils                          |
| <input type="checkbox"/> FRCC  | <input type="checkbox"/>            | 3 - Load-serving Entities  |
| <input type="checkbox"/> MAAC  | <input type="checkbox"/>            | 4 - Transmission-dependent Utilities                                   |
| <input type="checkbox"/> MAIN  | <input type="checkbox"/>            | 5 - Electric Generators  |
| <input type="checkbox"/> MAPP  | <input type="checkbox"/>            | 6 - Electricity Brokers, Aggregators, and Marketers                    |
| <input checked="" type="checkbox"/> NPCC                               | <input type="checkbox"/>            | 7 - Large Electricity End Users  |
| <input type="checkbox"/> SERC  | <input type="checkbox"/>            | 8 - Small Electricity End Users  |
| <input type="checkbox"/> SPP   | <input type="checkbox"/>            | 9 - Federal, State, Provincial Regulatory or other Government Entities |
| <input type="checkbox"/> WECC  |                                     |  |
| <input type="checkbox"/> NA - Not Applicable                           |                                     |  |



This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

**Question 1: Scope of Work**

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

Yes.

No.

Comments

**Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment", was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.**

**Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, it should only be in the Protection and Control SAR.**

**Measurement I.F.S2.M6, "Use of Disturbance Data to Develop and Maintain Models", is missing and should be added to the Modeling SAR.**

**Measurement III.A.S2.M2 is listed in the Protection SAR, however it was not part of translation tables of Version 0, draft 1. While this may be appropriate to include it in Protection SAR, please provide the rationale for its inclusion.**

**Question 2: Reliability Need**

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

Yes.

No.

Comments

**Question 3: Grouping of the Standards for Development Purposes**

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

Yes.

No.

Comments

**The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:**

**II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR**

**II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR**

**III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR**

**The following Measurements do not belong in the Modeling SAR:**

**III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR**

**III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Consider whether this better fits in the Protection and Control SAR**

**III.C.M1 to M4 these could be better severed as a separate SARs to align with the version 0 standard already developed instead of as part of the modeling SAR. They specify requirements to maintain reactive resources and voltage level and are closer aligned to Version 0 standard VAR-001. These should be grouped as a separate SAR to ensure consistency, eliminate duplication and incorporated as additional requirements to standard Version 0 standard VAR-001**

**Question 4: Challenges to Achieving Consensus**

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

| <b>Difficulty Reaching Consensus</b>  | <b>Topic</b>   | <b>Challenges to Overcome to Achieve Consensus</b>  |
|---|--|---|
| <b>SAR- Disturbance Monitoring and Reporting</b>  |  |   |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | I.F.S1.M2, List of monitoring equipment installations & operating status                                       |   |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | I.F.S2.M3, Disturbance monitoring data reporting Requirements  |   |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | I.F.S2.M4, Recorded fault and disturbance Data   |   |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | I.F.S2.M5, Use Database  |   |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult | II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data       | <b>Very difficult to measure whether the procedures are "complete" or "incomplete", for compliance or non-compliance</b>                                    |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult | II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies  | <b>Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance</b>                       |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult | III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment | <b>NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR</b>  |
| <b>SAR - Modeling</b>   |  |   |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | I.D.S1.M1, Assessment of reactive power resources  | <b>Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "IA" assessments</b> |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult | I.D.S1.M2, Generator reactive power capability   | <b>Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"</b>                        |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | II.B.S1.M1, Procedures for validating generation equipment data  | <b>Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by individual unit</b>                                     |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | II.B.S1.M2, Verification of gross and net dependable capability  | <b>Allow operational data to be used instead of a separate test, if adequate</b>  |

|  |   |  |
|--|---|--|
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | II.B.S1.M3, Verification of gross and reactive power capability of generators                                   | <b>Five year test cycle is arbitrary. Allow operational data to be used instead of a separate test, if adequate</b>  |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult            | II.B.S1.M4, Test results of generator voltage regulator controls and limit functions                            | <b>Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate</b>  |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult            | II.B.S1.M5, Test results of speed/load governor controls  | <b>Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate</b>  |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult            | II.B.S1.M6, Verification of excitation system dynamic modeling data   | <b>Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed</b> |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands | <b>Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)</b>                   |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands           | <b>Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)</b>                   |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | II.E.S1.M3, Customer (dynamic) demand data  | <b>Load Serving Entities may not be equipped to determine dynamic demand characteristics</b>   |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode        | <b>Allow procedure to be only that Generation Owner/Operator reports when not in automatic voltage control mode, Transmission Operator keeps and analyzes data</b>   |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner                         | <b>There is an incentive not to report, and penalties for a larger number of reported incidents</b>  |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | III.C.S2.M3, Documentation of schedule for maintaining network voltage  |  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult | III.C.S2.M4, Log operation not maintaining network voltage schedules  | <b>There is an incentive not to report, and penalties for a larger number of reported incidents</b>  |
| <input type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input checked="" type="checkbox"/> Difficult            | III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers              |  |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult            | III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers                                  |  |

|   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.                           |  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays | <b>Generation Owners/Operators may not be equipped to determine this information</b>   |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.C.S5.M9, Information on speed/load governing system   |  |
| <b>SAR – Protection and Control</b>   |   |  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.A.S2M2, Redundancy requirements for transmission system protection  | <b>Each region should have analysis or specific requirements to make redundancy requirements clear.</b>                        |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.B.S1.M1, Assessment of reliability impact of transmission control devices   | <b>"Transmission Control Devices" needs to be clearly defined</b>  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.B.S1.M2, Transmission control device models and data  | <b>"Transmission Control Devices" needs to be clearly defined</b>  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.B.S1.M3, Periodic review & validation of settings & operating strategies  | <b>"Transmission Control Devices" needs to be clearly defined</b>  |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment        | <b>Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT</b> |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.E.S1-S2.M1, Documentation of undervoltage load shedding program   | <b>Documentation of such program would be easy but this should be applicable where such schemes already exists.</b>            |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.E.S1.M2, UVLS Regional Database   | <b>Documentation of such program would be easy but this should be applicable where such schemes already exists.</b>            |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.E.S1.M5, Analysis & documentation of UVLS event   | <b>Documentation of such program would be easy but this should be applicable where such schemes already exists.</b>            |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems                                |  |
| <b>SAR – Black Start Capability</b>   |   |  |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function                            |  |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.A.S1.M3, Diagram blackstart units and initial switching  | <b>Does not address the issue of security of such diagrams. Confidentiality of these diagrams should be maintained.</b>        |

|   |  |   |
|---|--|---|
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.B.S1.M1, Document automatic load restoration (ALR) programs including database    | <b>Documentation of such program would be easy but this should be applicable where such schemes already exists.</b>                                     |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.B.S1.M2, Document auto load restoration program with regional requirements        | <b>Documentation of such program would be easy but this should be applicable where such schemes already exists.</b>                                     |
| <input type="checkbox"/> Easy<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.B.S1.M3, Assess effectiveness of automatic load restoration programs              | <b>Automatic Load Restoration owners/operators may not be equipped to perform this assessment, which should be done on a Regional coordinated basis</b> |
| <input checked="" type="checkbox"/> Easy<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Difficult | IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program |   |

**Question 5:**

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

**For periodic testing of generator capabilities, it could be problematic to determine how to consistently conduct tests. In addition, there are difficult financial issues to be dealt with.**

**Based on previous experience, determination of dynamic load modelling will be a challenge.**

**It is not clear why the System Restoration standards (IV.B....) are being pushed through this process. The importance of these particular standards does not seem to warrant fast tracking rather than going through normal due process. Version 0 already has requirements for restoration plans, so any standards developed here should be coordinated with existing Version 0 standards (EOP-005, R7 and R8) to assure consistency.**